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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/699,766	11/03/2003	Albert Sun	MXIC 1522-1	4242

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EXAMINER	
PATEL, HETUL B	

ART UNIT	PAPER NUMBER
2186	

DATE MAILED: 11/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/699,766	SUN ET AL.	
	Examiner	Art Unit	
	Hetul Patel	2186	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *03* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 October 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *10/20/2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This office action is in response to communication filed on October 09, 2006. Claims 1-15 are presented again for examination.

2. The prosecution of this application has been assumed by Examiner Patel.

3. The IDS filed on 10/20/2006 has been received and carefully considered.

4. Applicant's arguments filed on October 09, 2006 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made as shown below.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

5. Claims 1-7, 9-11 and 13-15 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 3-8, 10-11, 13, 12, 14 and 14, respectively, of copending Application No. 10/699,756. Although the conflicting claims are not identical, they are not patentably distinct from each other because in view of the obviousness-type double patenting rationale enunciated in Georgia Pacific Corp v United States Gypsum Co., 52 USPQ2d 1590, claims 1-7, 9-11 and 13-15 merely defines an obvious variation of the invention claimed in claims 1, 3-8, 10-11, 13, 12, 14 and 14, respectively, of copending Application No. 10/699,756. The initialization function of the copending Application No. 10/699,756 is a subset of the configuration function of the instant application.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1-2, 4-6, 8, 14 and 15 are rejected under 35 U.S.C. 102(e) as being anticipated by Kundu et al. (USPN: 6,751,723) hereinafter, Kundu.

As per claim 1, Kundu teaches an integrated circuit (i.e. SOC 300 in Fig. 17) comprising: a configurable logic array (i.e. 10 in Fig. 17) having a programmable configuration defined by configuration data stored in electrically programmable configuration points within the configurable logic array; a programmable configuration memory (i.e. 10 in Fig. 17), adapted to store the configuration data; memory (i.e. the combination of 332, 334 and 336 in Fig. 17) storing instructions for a mission function for the integrated circuit, storing instructions for a configuration function used to transfer the configuration data from the configuration memory to the programmable configuration points within the configurable logic array (this feature is inherently taught by Kundu, in other words, memory has to store the mission function, the configuration load function to load/receive data from external device(s) and the configuration transfer function to transfer data within the FPGA); and a processor (i.e. 330 in Fig. 17) coupled to the memory which fetches and executes said instructions from the memory (e.g. see Col.14, line 66 – Col:15, line 10 and Fig. 17).

As per claims 2 and 4, Kundu teaches the claimed invention as described above and furthermore, Kundu teaches that the memory (i.e. the combination of 332, 334 and 336 in Fig. 17) comprises a nonvolatile read-only memory (i.e. the ROM 334 in Fig. 17).

As per claims 5 and 6, Kundu teaches the claimed invention as described above. As described above in the rejection of claim 1, the features of storing, the mission function and the functions/instructions of loading data from external device and transferring data within FPGA, in the memory (within the integrated circuit) has to be inherently present in the integrated circuit taught by Kundu because in order to

load/execute the mission function in/by the processor, it has to be stored in the memory. Similarly, in order to load/receive data from external device(s) and transferring the data within the FPGA, the load function/instruction and the transfer function/instruction has to be stored in the memory so the processor can execute/run it.

As per claim 8, Kundu teaches the claimed invention as described above and furthermore, Kundu teaches an input port (i.e. 308 and 312 in Fig. 17) by which data is received from a source (i.e. in Fig. 17) external to the integrated circuit (e.g. see Col. 14, lines 1-5), in other words, loading the programmable configuration memory via the input port as claimed.

As per claims 14 and 15, Kundu teaches the claimed invention as described above and furthermore, Kundu teaches that the integrated circuit further comprises an interface (i.e. the combination of VCI 302 and 306 in Fig. 17) between the processor (i.e. 330 in Fig. 17) and the configurable logic array (i.e. 10 in Fig. 17) supporting the configuration function, which loads the programmable configuration memory via an input port (i.e. 308 and 312 in Fig. 17) on the integrated circuit (e.g. see Fig. 17); and an interface (i.e. the internal busses which are not shown within the FPGA 10 in Fig. 17)between the configuration memory (i.e. 10 in Fig. 17) and the configurable logic array (i.e. 10 in Fig. 17) supporting the transfer of configuration data to the configuration logic array (i.e. 10 in Fig. 17).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kundu in view of Hsu et al. (USPN: 5,359,570) hereinafter, Hsu.

As per claim 3, Kundu teaches that the memory comprises a nonvolatile read-only memory (i.e. the ROM 334 in Fig. 17). However, Kundu does not teach that the memory comprises a floating gate memory device. Hsu, on the other hand, teaches that floating gate memory devices have the advantage over using the ROM that they can be programmed and erased, electrically, thereby, exhibiting the advantages of ROM memory, i.e., low power consumption and faster access, along with the writeability of magnetic medium. In addition, as integrated circuit fabrication scale increases, greater density can be achieved. Therefore, it would have been obvious to combine Hsu and Kundu for the benefits described above.

8. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kundu in view of Sun et al. (USPN: 6,401,221) hereinafter, Sun.

As per claim 7, Kundu teaches that the claimed invention as described above, but failed to teach the watchdog timer as claimed. Sun, however, discloses a watchdog timer coupled to the CPU (i.e. 122 in Fig. 1), a configuration function that includes using

a timer to generate a reset on a response to an error, upon the initialization event, reexecuting the configuration load and configuration function (column 4, lines 15-19). Kundu and Sun et al. are analogous art because they are from the same field of endeavor, an in circuit programming system that can run downloaded code and reset the system when necessary. At the time of the invention it would have been obvious to a person of ordinary skill in the art to incorporate a watchdog timer and the functions that come with the timer. The suggestion for doing so would have been the ability to reset the system when an error occurs. Therefore, it would have been obvious to combine Sun Kundu for the benefit of resetting the system to obtain the invention as specified in claim 7.

9. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kundu in view of Sun et al. (USPN: 5,901,330) hereinafter, Sun2.

As per claim 9, Kundu teaches that the claimed invention as described above, but failed to teach that the configuration function includes receiving encrypted configuration data via an input port on the integrated circuit, and decrypting the configuration data. Sun2, however, discloses that the configuration function includes receiving encrypted configuration data via the input port and then decrypting the configuration data (column 13, lines 59-66). Kundu and Sun2 are analogous art because they are from the same field of endeavor, an in circuit programming system that can run downloaded code and reset the system when necessary. At the time of the invention it would have been obvious to a person of ordinary skill in the art to encrypt

the incoming data and then decrypt the data. The suggestion for doing so would have been system security. Therefore, it would have been obvious to combine Sun2 and Kundu for the benefit of security to obtain the invention as specified in claim 9. The examiner notes that the in-circuit programming and the configuration function perform the same function and are therefore not dissimilar enough to differentiate given the known definitions of the two terms.

10. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kundu in view of Lawman (USPN: 6,028,445).

As per claim 10, Kundu teaches that the claimed invention as described above, but failed to teach that the configuration function includes receiving compressed configuration data via an input port on the integrated circuit, and uncompressing the configuration data. Lawman, however, discloses a configuration function that includes receiving compressed configuration data via an input port and then decompressing the data (column 8, lines 12-33). Kundu and Lawman are analogous ad because both deal with downloading data in a compressed format to a programmable device. At the time of the invention it would have been obvious to a person of ordinary skill in the art to allow the configuration function to receive compressed data and to decompress it. The suggestion for doing so would have been to save time and bandwidth. Therefore, it would have been obvious to combine Lawman and Kundu for the benefit of time and bandwidth savings to obtain the invention as specified in claim 10.

11. Claims 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kundu.

As per claims 11-13, Kundu teaches the claimed invention as described above and furthermore, Kundu teaches that the programmable configuration memory comprise floating gate memory cells, i.e. charge programmable memory cells (i.e. the FPGA10 in Fig. 17). However, Kundu does not clarify whether these cells are volatile or not. However, it is well-known and notorious old in the art at the time the current invention was made to combine both the volatile and nonvolatile cells in the FPGA memory. Examiner herein taking Official Notice on this subject matter.

Conclusion

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hetul Patel whose telephone number is 571-272-4184. The examiner can normally be reached on M-F 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matt Kim can be reached on 571-272-4182. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

H. B. Patel 11/13/2006
Hetul Patel
Patent Examiner
Art Unit 2186